



## Oral tissue: to submit, or not to submit

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### Introduction

The high tempo dentistry required by the Navy results in competent and motivated dental officers, intent on maintaining and improving the oral health of our troops. To maintain dental readiness, an understanding of biopsy, tissue submission, and clinical pathological correlation is essential. These crucial tools, inherent to our success as diagnosticians, may at times be elusive within our daily practice.

With the integration of medical and dental commands, as well as the guidelines established by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO),<sup>1</sup> how each of these communities operates has come under examination. As a dentist, especially during an independent operational tour, it does not often occur to us that we may be performing biopsies on a daily basis. Since a biopsy is the process of removing tissue from living patients for diagnostic examination, every extracted tooth and gingivectomy is undeniably a biopsy specimen.<sup>2</sup> This fact, not often stressed in our dental training, should pose a few important questions. As a dentist, under intense pressure to maintain readiness, does one need to consider submitting every fragment of tooth and tissue to the pathologist? What is the clinical diagnostic process? And what are the consequences of not submitting the appropriate tissues to pathology?

### Does one need to consider submitting every fragment of tissue removed during dental procedures?

The answer is a resounding yes. Professionally, ethically and legally, all human tissue removed from the body must be submitted for pathologic examination, unless parameters are otherwise established by the pathologist and the provider. In the daily practice of dentistry, undoubtedly there is human oral tissue removed and discarded that should be sent for pathological evaluation. The following are some guidelines as to what tissue should and should not be submitted to pathology.

(1) No tissue submitted for pathologic examination is ever rejected. Therefore, if a clinician wishes to submit every tooth, tooth fragment, restoration, bone chip, or foreign object he removes from the oral cavity, he can be assured that the tissue will be examined and a diagnosis will be rendered.

(2) An extracted tooth, not associated with radiographic pathology, with no appreciable soft tissue attached need not be submitted for pathologic evaluation. The clinical diagnosis should be recorded in the dental record and provided to the patient. This exception to submission guidelines must be in writing and agreed upon by the clinic and pathology staff.

(3) Other examples that may be exceptions to submission include: surgical packing material, surgical hardware, unused bone graft, restoration material and other tissues approved by the medical/dental staff and pathologist in writing. These exceptions are made only when the quality of care has not been compromised, another suitable means of verifying the removal is utilized, and removal of tissue is documented in the patient's record.

(4) In dentistry, as a rule, all soft tissue removed from the oral cavity and head and neck should be submitted for pathologic evaluation.

### What is the clinical diagnostic process?

With an understanding of the guidelines of tissue submission, one can focus on the diagnostic process. The diagnostic process clearly begins with the dentist, as he must decide what necessitates a biopsy as well as what must be referred to a specialist for further evaluation. The primary care dentist is at the center of oral disease detection and diagnosis, however he is not alone. An important aspect of our military community is that the oral pathologist and oral surgeon have practiced general dentistry. As a dentist, the oral pathologist knows that an extracted tooth without any appreciable soft tissue can be clinically diagnosed chair side, therefore negating the need for submission. Extracted teeth with attached tissue, however, must be submitted for microscopic examination, as the sequela of an undiagnosed or misdiagnosed disease may be significant. Selected entities possibly found in discarded tissue will be discussed below as deterrents to not submitting all appropriate tissue.

### What are the consequences of not submitting the appropriate tissues to pathology?

The odontogenic keratocyst (OKC) is an example of a lesion that may not be properly diagnosed without the submission of tissue. This lesion possesses a plethora of radiographic and clinical presentations. As such, it may mask

itself as a reactive or developmental cyst anywhere in the gnathic bones. It is particularly common in the posterior mandible, often times in association with impacted 3<sup>rd</sup> molars, where one may expect inconsequential dental follicular tissue or a dentigerous cyst. It is not possible to definitively diagnose an OKC radiographically or clinically and intraoperative tissue from an OKC may appear similar to numerous other entities not associated with significant post-surgical sequelae.<sup>3</sup> It is the consequences of discarding the 3<sup>rd</sup> molar with an attached OKC that is to be averted. Treatments for an OKC vary from surgical enucleation and chemical cauterization to partial ostectomy and loss of several adjacent teeth. Additionally the diagnosis of an OKC may, rarely, pretend a genetic disease called Gorlin Syndrome.

Every tooth with periradicular pathology receiving treatment, including the removal of tissue via apicoectomy, periodontal surgery or root resection, should have the resulting tissue submitted for pathological examination. The reason is to potentiate the detection of disease. One would have to look no further for the benefits of microscopic examination than when actinomycosis is diagnosed within the tissue from an apicoectomy. This diagnosis, not discernable by clinical or radiographic means, would alter the treatment remarkably. A course of antibiotics ranging from 3-6 weeks up to 12 months may be appropriate.<sup>4</sup> More importantly, an increased follow-up is indicated in addition to a longer radiographic healing time. This diagnosis is crucial in avoiding unnecessary retreatment.

The submission of all soft tissue not only allows for detection of local disease, it may occasionally provide the practitioner with a tool that, along with clinical pathological correlation, may unearth systemic disease. What appears as normal oral mucosa or gingiva may show specific microscopic variations. These characteristics, only discernable by histological examination, could allow the pathologist to direct the practitioner to investigate a broader differential diagnosis, which in turn may necessitate medical consultation.

It should be noted that the decision to biopsy, what to biopsy, as well as what to submit for pathological examination does not have to rest solely on the practitioner. The clinician has the opportunity to include the pathologist and the surgeon in this process. Clinical diagnostic success correlates directly to the level of communication with the pathologist. This relationship may be fostered with phone calls and emails, and may result

in the improved diagnostic ability of both the provider and the pathologist. Additionally, this may increase the dentist's comfort level in regards to submission guidelines. Even prior to biopsy, a picture or radiograph of a lesion in email, sent to the pathologist, may lead to superior clinical results. These interactions may assist Navy dentists in becoming exceptional diagnosticians while providing our patients with the optimum care and treatment they deserve.

## Conclusion

The standard for detection and prevention of oral disease has been exceptional among the oral health community, and especially within the military. Well construed tissue submission guidelines and the cultivation of strong interdisciplinary relationships will enhance the profession, while ensuring compliance with guidelines set forth by JCAHO. More importantly, patients will be treated appropriately, allowing everyone to experience the finest in Navy dentistry.

## References:

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